

## 2020 INTERNAL TRIPS:

The 2020 internal travel patterns were estimated using the same procedure as the base year travel patterns. Socio-economic data projected to the year 2020 was used to determine the future year patterns. The data was provided by the Planning Departments of Rockingham and Hamlet. The trip productions and attractions were again distributed using the same gravity model. The trip generation rates were adjusted using a composite factor to reflect future growth. See below for calculations. The internal data estimates are in **Table A-1b**. The employment estimates are in **Table A-5b**.

### Travel Model Input Variables

TRIP PERCENTAGES BY PURPOSE	
Internal of Total	87%
HBW	23%
OHB	47%
NHB	30%

YEAR	PERSONS PER DWELLING UNIT	PERSONS PER VEHICLE
1994	2.40	1.42
2020	2.20	1.15

$$\text{COMPOSITE FACTOR} = \frac{1994 \text{ PERSONS/VEHICLE}}{2020 \text{ PERSONS/VEHICLE}} \times \text{USAGE FACTOR} \times \frac{2020 \text{ PERSONS/DU}}{1994 \text{ PERSONS/DU}}$$

$$\text{INCREASE FOR GENERATION RATES} = \frac{\text{AVE. 1994 TRIP RATE}}{\text{COMPOSITE FACTOR}} - \text{AVERAGE 1994 TRIP RATE}$$

#### EXAMPLE:

$$\text{COMPOSITE FACTOR} = \frac{1.42}{1.15} \times \frac{2.20}{2.40} \times 0.99 = 1.12$$

$$\text{INCREASE FOR GENERATION RATES} = (8.12 \times 1.12) - 8.12 = 0.970 \text{ (use 0.90)}$$

Trip Generation Rates						
YEAR	EXCELLENT	ABOVE AVERAGE	AVERAGE	BELOW AVERAGE	POOR	OVERALL AVERAGE
1994	12.00	10.00	9.50	7.00	6.00	8.12 *
INCREASE	0.90	0.90	0.90	0.90	0.90	----
2020	12.90	10.90	10.40	7.90	6.90	9.04 *

\* Calculated from the IDS computer program